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THE 1920 WHEAT, OATS, AND CORN YIELDS  
FROM SOIL EXPERIMENT FIELDS IN ILLINOIS

BY THE DEPARTMENT OF AGRONOMY

In the following tables are reported the 1920 yields of wheat, oats, and corn from a large number of the University soil experiment fields located in different parts of Illinois. These results confirm those of previous years, and they demonstrate again the possibility of improving the yields of our important crops by systems of soil treatment which take into consideration both profitable production and permanent agriculture. A more complete report of experiments conducted on these fields may be found in Bulletin 219, "Illinois Crop Yields from Soil Experiment Fields" (108 pp., 1919).

EXPLANATION OF DATA

CROP ROTATION PRACTICED

The usual rotation practiced on these fields is wheat, corn, oats, and clover.

SOIL TREATMENT

**Animal Manures.**—Animal manures, consisting of excreta from animals with stable litter, are applied to the respective plots in amounts proportionate to previous crop yields.

**Plant Manures.**—All crop residues produced on the land, such as stalks, straw, and chaff, are returned to the soil, and in addition a green manure crop of sweet clover is seeded in small grains to be plowed under in preparation for corn. (On plots without limestone the sweet clover seldom survives.)

**Mineral Manures.**—The yearly acre-rates of application are: for limestone, 1,000 pounds; for raw rock phosphate, 500 pounds; and for potassium, the equivalent of 200 pounds of kainit. The initial application of limestone is usually 4 tons per acre.

**NOTE.**—The terms *animal manures* and *plant manures* are introduced here in place of the terms *manures* and *crop residues* used in previous publications. The principal reason for this change in terminology is the fact that the expression *crop residues* is not sufficiently comprehensive, giving no recognition to the green manures used in the system, which, after all, probably play as important a rôle as the residues, if not more important.

TABLE 1.—WHEAT YIELDS FROM EXPERIMENT FIELDS IN SOUTHERN ILLINOIS, 1920  
(Bushels per acre)

Soil treatment applied	Lebanon	Odin	Oblong	Newton	West Salem	Unionville	Sparta	Average
None (except crop rotation).....	24.6	3.6	1.6	1.7	2	3.3	8.3	6.2
Animal manures.....	27.7	.....	1.0	.3	3.5	5.6	20.5	9.8
Animal manures, limestone.....	32.8	.....	8.7	4.3	3.8	5.2	27.2	13.7
Animal manures, limestone, phosphorus.....	31.4	.....	17.2	11.2	4.8	9.8	27.5	17.0
Plant manures.....	19.1	9.7	2.0	1.7	9	4.2	9.7	6.8
Plant manures, limestone.....	29.3	21.3	12.2	4.2	2.7	9.4	20.8	14.3
Plant manures, limestone, phosphorus.....	30.1	26.2	15.2	11.8	3.5	12.3	22.2	17.3
Plant manures, limestone, phosphorus, potas.....	29.5	22.5	15.8	10.3	7.8	11.9	26.7	17.8

TABLE 2.—WHEAT YIELDS FROM EXPERIMENT FIELDS IN CENTRAL ILLINOIS, 1920  
(Bushels per acre)

Soil treatment applied	Hartsburg	Sidell	Pana	Clayton	Carthage	Minonk	Urbana	Carlinville	Average
None (except crop rotation).....	29.5	14.0	10.6	15.5	25.4	39.7	35.0	16.1	23.2
Animal manures.....	22.0	15.0	14.8	30.8	32.3	47.5	40.5	19.5	27.8
Animal manures, limestone.....	43.1	14.1	25.2	27.5	39.3	42.4	40.2	39.4	33.9
Animal manures, limestone, phosphorus.....	44.7	14.9	22.8	32.8	41.1	46.0	51.1	39.1	36.6
Plant manures.....	37.8	9.6	7.5	11.5	18.7	40.2	33.8	15.0	21.8
Plant manures, limestone.....	34.4	8.0	17.8	19.6	36.8	35.8	39.8	34.3	28.3
Plant manures, limestone, phosphorus.....	38.2	14.2	20.8	21.9	32.1	39.0	51.2	37.8	31.9
Plant manures, limestone, phosphorus, potas.....	37.7	14.9	15.0	22.7	41.6	35.6	45.3	36.7	31.2

TABLE 3.—WHEAT YIELDS FROM EXPERIMENT FIELDS IN NORTHERN ILLINOIS, 1920  
(Bushels per acre)

Soil treatment applied	Mt. Morris	Dixon	Spring Valley	Kewanee	Oquawka	Joliet	La Moille	Aledo	Average
None (except crop rotation).....	31.1	16.9	22.7	28.9	2.8	26.0	32.1	35.9	24.6
Animal manures.....	42.5	30.8	23.8	31.2	3.3	33.6	43.3	41.5	31.2
Animal manures, limestone.....	46.2	33.2	26.7	29.3	6.5	36.4	41.2	39.7	32.4
Animal manures, limestone, phosphorus.....	46.1	36.9	29.3	35.3	5.0	46.5	40.8	43.2	35.4
Plant manures.....	31.8	18.7	24.3	29.2	4.2	32.7	33.7	29.9	25.6
Plant manures, limestone.....	42.0	20.7	33.8	29.4	8.2	33.2	36.9	31.7	29.5
Plant manures, limestone, phosphorus.....	48.3	26.4	33.5	38.4	10.3	47.4	40.6	38.5	35.4
Plant manures, limestone, phosphorus, potas.....	48.5	27.9	26.7	35.9	10.8	48.3	37.7	38.2	34.2

(Bushels per acre)

Soil treatment applied	Lebanon	Odin	New-ton	Toledo	West Salem	Unionville	Elizabeth-town	Enfield	Ral-eigh	Oblong	Ewing	Aver-age
None (except crop rotation)	3.8	21.9	18.3	16.5	8.2	26.0	31.5	34.8	16.8	11.9	8.2	18.0
Animal manures	8.4	.....	21.2	35.3	22.1	35.4	29.7	42.6	26.4	14.0	25.5	26.1
Animal manures, limestone	10.8	.....	50.0	49.8	33.9	49.4	45.4	54.9	56.9	39.5	38.2	42.9
Animal manures, limestone, phosphorus	13.8	.....	52.4	44.0	35.7	48.3	60.7	52.4	60.7	39.4	50.7	45.8
Plant manures	2.4	23.6	23.4	15.4	14.1	37.1	18.5	34.5	22.6	18.8	12.7	20.3
Plant manures, limestone	8.9	27.3	39.0	30.5	11.2	59.5	48.0	51.0	42.8	25.2	24.3	38.4
Plant manures, limestone, phosphorus	10.2	24.1	39.0	34.8	25.3	57.6	60.2	51.2	44.8	20.3	21.1	35.3
Plant manures, limestone, phos., potas.	15.8	40.7	57.0	47.9	44.9	65.3	55.9	53.7	59.7	27.8	47.2	46.9

TABLE 5.—CORN YIELDS FROM EXPERIMENT FIELDS IN CENTRAL ILLINOIS, 1920  
(Bushels per acre)

Soil treatment applied	Harts-burg	Sidell	Pana	Clay-ton	Car-thage	Min-nonk	Vir-ginia	Urbana	Carlin-ville	Aver-age
None (except crop rotation)	50.4	45.6	30.3	47.9	39.8	52.0	30.8	67.4	8.7	41.4
Animal manures	58.3	46.5	35.2	66.4	40.6	67.0	49.8	82.2	15.9	51.3
Animal manures, limestone	63.0	54.6	31.6	75.1	48.3	68.1	57.6	87.4	23.2	56.5
Animal manures, limestone, phosphorus	61.7	55.6	33.0	76.7	51.2	61.7	56.6	93.2	27.8	57.5
Plant manures	65.2	45.6	42.8	59.2	43.7	62.0	43.6	70.8	7.7	49.0
Plant manures, limestone	67.9	50.5	46.1	65.7	57.3	61.6	43.8	82.6	11.7	54.1
Plant manures, limestone, phosphorus	64.3	52.7	47.8	70.1	49.3	65.8	59.4	91.0	15.9	57.4
Plant manures, limestone, phosphorus, potas.	59.0	57.4	53.3	71.6	52.0	64.2	62.6	90.8	17.1	58.7

TABLE 6.—CORN YIELDS FROM EXPERIMENT FIELDS IN NORTHERN ILLINOIS, 1920  
(Bushels per acre)

Soil treatment applied	Mt. Morris	Dixon	Union Grove	La Moille	Joliet	Ke-wanaw	Aledo	Spring Valley	Oquaw-ka	Aver-age
None (except crop rotation)	37.7	37.9	36.9	55.6	34.5	53.3	64.0	37.6	13.1	41.2
Animal manures	54.9	42.9	.....	75.5	48.6	65.3	73.8	54.0	16.4	53.9
Animal manures, limestone	51.6	48.3	63.3	76.8	51.1	59.6	68.3	53.8	26.6	56.6
Animal manures, limestone, phosphorus	50.4	54.2	62.2	74.0	48.9	72.4	75.4	55.0	32.4	58.3
Plant manures	42.1	46.9	43.4	55.8	46.0	51.9	74.5	47.4	13.2	46.8
Plant manures, limestone	63.2	53.6	63.2	58.7	42.8	61.4	80.2	50.6	50.3	58.2
Plant manures, limestone, phosphorus	61.9	52.3	59.6	61.4	47.4	64.7	81.1	53.0	54.0	59.5
Plant manures, limestone, phosphorus, potas.	64.6	55.2	70.2	56.3	51.3	68.9	79.0	53.4	62.6	62.4

TABLE 7.—OAT YIELDS FROM EXPERIMENT FIELDS IN SOUTHERN ILLINOIS, 1920  
(Bushels per acre)

Soil treatment applied	Lebanon	West Salem	Toledo	Raleigh	Ewing	Enfield	Elizabeth-town	Average
None (except crop rotation).....	37.7	3.9	9.6	7.3	7.4	11.0	20.8	14.0
Animal manures.....	42.3	15.0	15.0	9.7	10.7	11.8	17.2	17.4
Animal manures, limestone.....	46.6	16.2	22.9	12.6	22.0	23.6	28.0	24.6
Animal manures, limestone, phosphorus.....	45.2	23.1	23.2	12.0	21.7	27.0	26.2	25.5
Plant manures.....	43.1	13.3	10.1	7.6	5.1	9.8	21.2	15.7
Plant manures, limestone.....	54.8	16.6	19.1	13.0	11.8	24.5	23.1	23.3
Plant manures, limestone, phosphorus.....	50.6	19.4	23.1	13.1	17.4	29.1	24.7	25.3
Plant manures, limestone, phosphorus, potassium.....	58.0	15.6	22.3	13.4	21.6	28.8	20.6	25.8

TABLE 8.—OAT YIELDS FROM EXPERIMENT FIELDS IN CENTRAL ILLINOIS, 1920  
(Bushels per acre)

Soil treatment applied	Sidell	Hartsburg	Pana	Clayton	Carthage	Minonk	Virginia	Urbana	Carlinville	Average
None (except crop rotation).....	71.8	62.6	42.2	31.4	33.8	69.2	53.4	49.8	35.9	50.0
Animal manures.....	80.1	70.0	38.9	38.1	36.6	73.4	58.1	65.8	37.2	56.0
Animal manures, limestone.....	80.6	70.8	58.6	32.8	42.0	67.5	57.5	70.9	63.3	60.4
Animal manures, limestone, phosphorus.....	82.7	73.3	45.3	40.6	48.1	63.4	48.4	63.3	57.2	58.0
Plant manures.....	69.7	58.6	43.1	43.1	28.9	96.6	45.6	46.8	35.6	52.0
Plant manures, limestone.....	67.3	62.8	53.1	52.8	46.4	92.5	38.4	57.9	54.7	58.5
Plant manures, limestone, phosphorus.....	68.9	68.0	56.2	55.5	43.8	94.4	51.9	79.9	52.0	63.4
Plant manures, limestone, phosphorus, potash.....	76.7	63.0	50.3	51.9	44.5	89.4	35.3	87.5	48.2	60.8

TABLE 9.—OAT YIELDS FROM EXPERIMENT FIELDS IN NORTHERN ILLINOIS, 1920  
(Bushels per acre)

Soil treatment applied	Mt. Morris	Dixon	Joliet	La Moille	Aledo	Kewanee	Spring Valley	Average
None (except crop rotation).....	64.2	50.2	58.6	72.2	71.7	62.0	51.3	61.5
Animal manures.....	85.2	64.2	67.5	77.0	73.4	65.8	51.6	69.2
Animal manures, limestone.....	85.0	76.2	69.5	75.8	65.8	74.7	50.6	71.1
Animal manures, limestone, phosphorus.....	88.4	86.6	93.1	76.7	84.4	75.6	60.0	80.7
Plant manures.....	66.6	66.9	61.7	75.8	71.7	63.0	40.0	63.7
Plant manures, limestone.....	93.8	77.7	72.5	78.4	72.3	64.5	46.9	70.9
Plant manures, limestone, phosphorus.....	93.4	87.2	82.5	81.2	77.7	67.5	52.2	76.0
Plant manures, limestone, phosphorus, potassium.....	77.0	83.9	71.7	77.0	79.7	70.0	58.8	74.0